

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed April 5, 2004 (the "Office Action"). Claims 14-22 are currently pending in the Application. Applicants respectfully request reconsideration and favorable action in this case.

**§ 112 Rejections**

Claims 14-22 are rejected under 35 U.S.C. Section 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. More specifically, the Office Action states the following: (1) It is unclear whether "an overhead pressure. . .," recited by Claims 21 and 22 would constitute the "greater than ambient pressure" recited by Claim 14, (2) ". . . a liquid having an organic component and a water component. . .," as recited by Claim 14, causes ambiguity and confusion, and (3) "the 'organic component' is also broadening the initial recited 'acetic acid'. The 'a water component' should be - the water component - since water is already initially recited in line 3." Additionally, the Office Action also asks "[is] the 'organic component and a water component' different or the same from the initially recited 'steam of water containing acetic acid' in line 3?"

Claims 21 and 22 have been amended to add clarification to the form of Claims 21 and 22, and to render moot item (1) discussed above. Regarding item (2) above, Claim 14 very clearly recites "providing *an input feed stream* of water containing acetic acid . . ." and "condensing *the vapor stream* to a liquid having an organic component and a water component . . . ." Applicants respectfully submit that the limitations are clearly recited and no room for confusion exists. For the same reason, contrary to the statement in the Office Action, the "organic compound" does not necessarily broaden the recited "acetic acid." Again, "acetic acid" is recited in relation to an "input feed stream" while "organic component" is recited in relation to a "vapor stream." Similarly, "a water component is the correct recitation since this is the first recitation of a water component of the "vapor stream."

The Office Action objects to the specification for the stated reason of failing to provide proper antecedent basis for the claimed subject matter because, states the Office Action, the limitation of "the dehydration column operating at greater than ambient pressure" is not positively recited in the specification. Applicants respectfully submit that the referenced limitation is supported not only by the claim itself (which is a part of the

specification), but is also supported by (among other things) the text at page 7, lines 9-12. Nevertheless, the specification has been amended to add further clarity and to render the objection moot.

### **§ 103 Rejection**

Claims 14-22 are rejected under 35 U.S.C. § 103(a) as being unpatenable over Applicants' disclosure of allegedly admitted prior art ("*conventional process*") in view of U.S. Patent No. 2,275,802 issued to Othmer, et al. ("*Othmer*") and to U.S. Patent No. 2,171,549 issued to Gordon et al. ("*Gordon*"). Applicants respectfully disagree for reasons provided below.

Claim 14 is allowable because the proposed modification of the *conventional process* in view of *Othmer* and *Gordon* does not teach or suggest "distilling the input feed stream in an azeotropic dehydration column having an overhead section into a vapor stream, the dehydration column operating at greater than ambient pressure," as recited by Claim 14. As conceded by the Examiner, neither the *conventional process* nor *Othmer* shows the dehydration column operating at greater than ambient pressure. However, the Examiner appears to argue that the missing limitation fails to patentably distinguish the invention of Claim 14 from the cited art because it is allegedly well known in the art to adjust the pressure based on a desired result. The Examiner also asserts that this argument is supported by the disclosure found in page 8, lines 60-65 of *Gordon*, which states "the process [for azeotropic distillation of aliphatic acids] is preferably operated under about atmospheric pressure conditions, although it can be conducted with the system at pressures at either above or below atmospheric." (*Gordon*, page 8, lines 60-65). Simply put, the Examiner's position appears to be that the missing limitation is obvious because (1) it is allegedly common knowledge for one skilled in the art to change operating pressure to a particular level to achieve a corresponding known result, and (2) that this assertion is supported by *Gordon*'s teaching that all pressure levels that are above, below, or equal to the atmospheric pressure may be used for its process. Applicants respectfully disagree with the Examiner's assertions and the rejection of Claim 14 for several reasons.

First, the alleged common knowledge that the Examiner sets forth as showing the missing limitation in fact does not show the missing limitation. The Examiner merely asserts that it is common knowledge for one skilled in the art to use **different pressure levels to**

**achieve different results**. This does not constitute an assertion that “. . . the dehydration column operating at **greater than ambient pressure**” [emphasis added] is shown. In fact, nothing in the Examiner’s assertion suggests that setting an operating pressure level of a dehydration column **using the ambient pressure** as a guide is common knowledge. Thus, the alleged common knowledge still fails to show the missing limitation, and Claim 14 is allowable.

Second, the identified portion of *Gordon* does not support the substance of what the Examiner asserts as common knowledge that allegedly shows the missing limitation of Claim 14. The identified portion of *Gordon* merely describes that **it is possible to use any pressure level for the process of Gordon**. This disclosure does not support the validity of the Examiner’s assertion that “. . . parameters like pressures and temperatures are known to be **the driving force** in any distillation operations and therefore are deemed to be result-effective variables which are within the skilled [sic] of an artisan.” [emphasis added]. Rather, it appears to directly contradict the Examiner’s assertion. For example, *Gordon*’s teaching that any pressure level above, below, or equal to the atmospheric pressure level can be used for its process appears to suggest that pressure has no material effect on the process of *Gordon*. Thus, at least according to *Gordon*, pressure cannot be the “driving force” as asserted by the Examiner.

Further, the identified portion of *Gordon* discusses the topic of pressure in terms of atmospheric pressure. However, the missing limitation specifically states “. . . greater than **ambient** pressure.” *Gordon* is completely silent on having a particular operating pressure as compared to the ambient pressure, and thus fails to show this missing limitation. In fact, using a dehydration column that operates at greater than ambient pressure is advantageous in some embodiments of the invention because the relatively higher operating pressure of the dehydration column allows low pressure steam generated at the condenser to have an increased level of pressure, which allows an improvement in efficiency of energy consumption. See, for example, page 15, paragraph 00057. This is an advantage that neither *Gordon* nor the *conventional process* benefits from because neither *Gordon* nor the *conventional process* teaches or suggests the missing limitation of Claim 14.

In view of *Gordon*’s failure to support the Examiner’s assertion, Applicants respectfully submit that the rejection of Claim 14 is based on a bare assertion of common knowledge. However, M.P.E.P. § 2144.03 specifically states that “it is **never** appropriate to

rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based." [emphasis added]. Because Claim 14 is rejected based only on this assertion of common knowledge, the rejection of Claim 14 is clearly improper. Thus, Claim 14 is allowable.

If the Examiner continues to maintain her rejection of Claim 14 based on this reasoning, then Applicant hereby requests the Examiner to provide documentary evidence in the next Office Action, as required by M.P.E.P. Section 2144.03(C). Further, if the Examiner is relying on personal knowledge to support the finding of what is known in the art, Applicant hereby requests that the Examiner provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. See M.P.E.P. Section 2144.03(C).

The Examiner further attempts to characterize the invention of Claim 14 as patentably indistinguishable from the *conventional process* by stating that the *conventional process* shows producing low pressure steam at a pressure level of 0.6 to 0.7 kilograms/cm<sup>2</sup>, and thus benefits from the advantages listed on page 16 of the present specification. This is incorrect. As stated on page 15, paragraph 00057 of the present application, ". . . the present invention generates useful low pressure steam within condenser 420 at a pressure of 0.6-2.0 kilograms/cm<sup>2</sup> because of the higher initial operating pressure." [emphasis added]. As stated in the identified portion of this specification, an operating pressure that is greater than an ambient level increases the upper limit of the low pressure steam that may be generated in a condenser. Thus, the *conventional process* described in the present application cannot benefit from the identified advantages, and Applicants respectfully submit that the invention of the present application is patentably distinct from the *conventional process*.

The Examiner also appears to state that some embodiments of the invention identified in the Table on page 17 of the present application are not patentably distinguishable from the *conventional process* described in the present application because the "total acetic acid lost to WWT, ton/year" is the same for the described azeotropic distillation and the embodiments of the invention identified in the Table. However, the present application specifically recognizes that the one or more beneficial results that may stem from some embodiments of the present invention do not include the level of acetic acid loss. For example, page 15, paragraph 00057 of the present invention states "while the higher column operating pressure disclosed in the present invention is not significantly different from the energy consumption and acetic acid losses when compared to prior art azeotropic distillation

systems operating at ambient pressure, the present invention creates useful low pressure steam within condenser 420 at a pressure of 0.6-2.0 kilograms/cm<sup>2</sup> because of the high initial operating pressure." [emphasis added]. As described in the present specification, the resulting pressure of the low pressure steam is higher than what is normally generated by the described conventional system. As such, the fact that the respective levels of acetic acid loss of some embodiment of invention and of a *conventional process* may be the same is irrelevant for the determination of whether the invention of the present application is patentable. For these and other reasons, Claim 14 is allowable. Reconsideration and favorable action are requested.

As depending from allowable independent Claim 14, dependent Claims 15-22 are also allowable. Reconsideration and favorable action are requested.

**CONCLUSIONS**

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims. If the Examiner feels that a telephone conference or an interview would advance prosecution of this Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

The Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.  
Attorneys for Applicants

A handwritten signature in black ink, appearing to be 'JB Johnson', with a long horizontal line extending to the right.

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